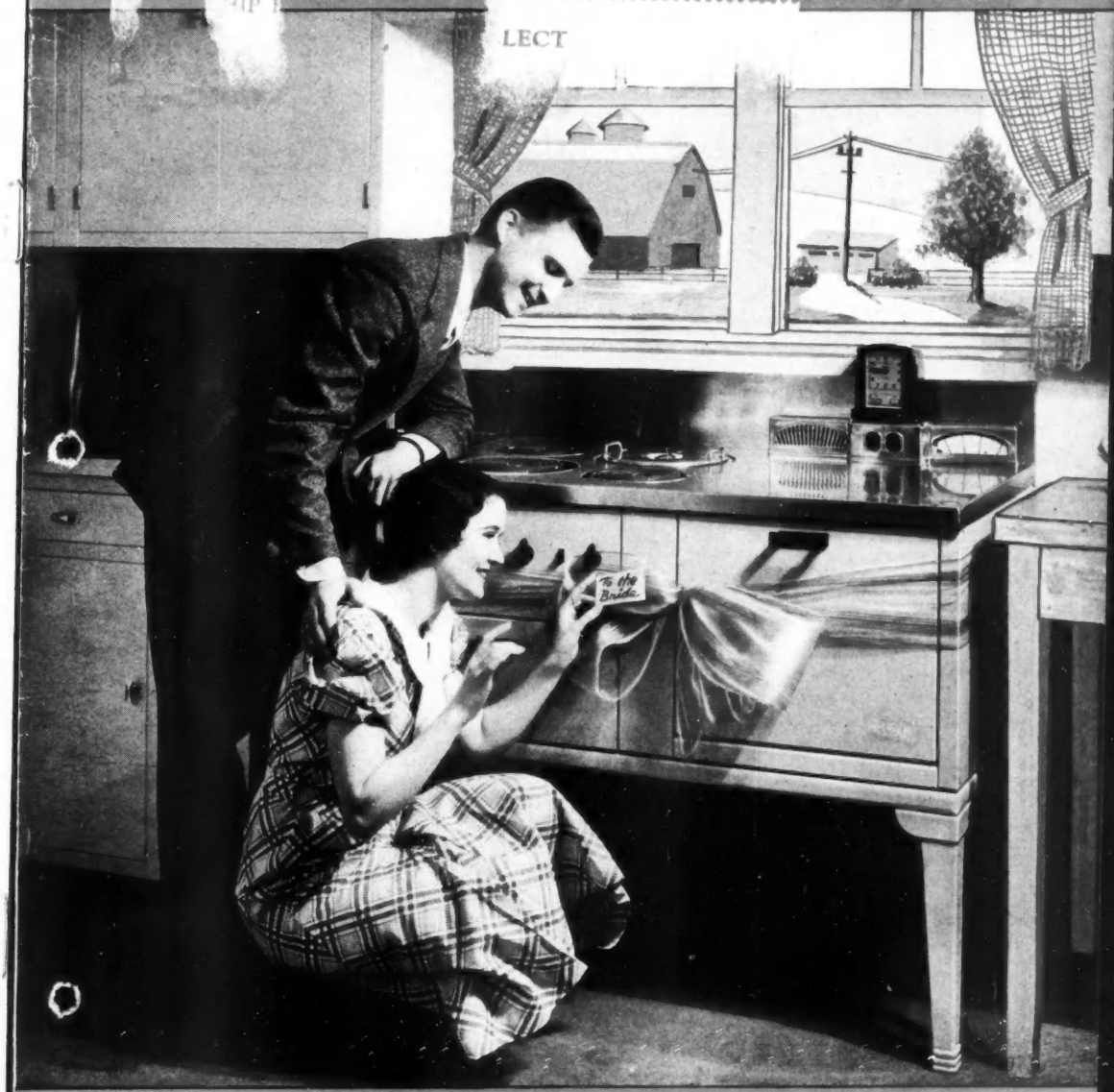
Electricity on the Farm

A MONTHLY MAGAZINE FOR THE UP-TO-DATE RURAL FAMILY



What is your title for this picture?

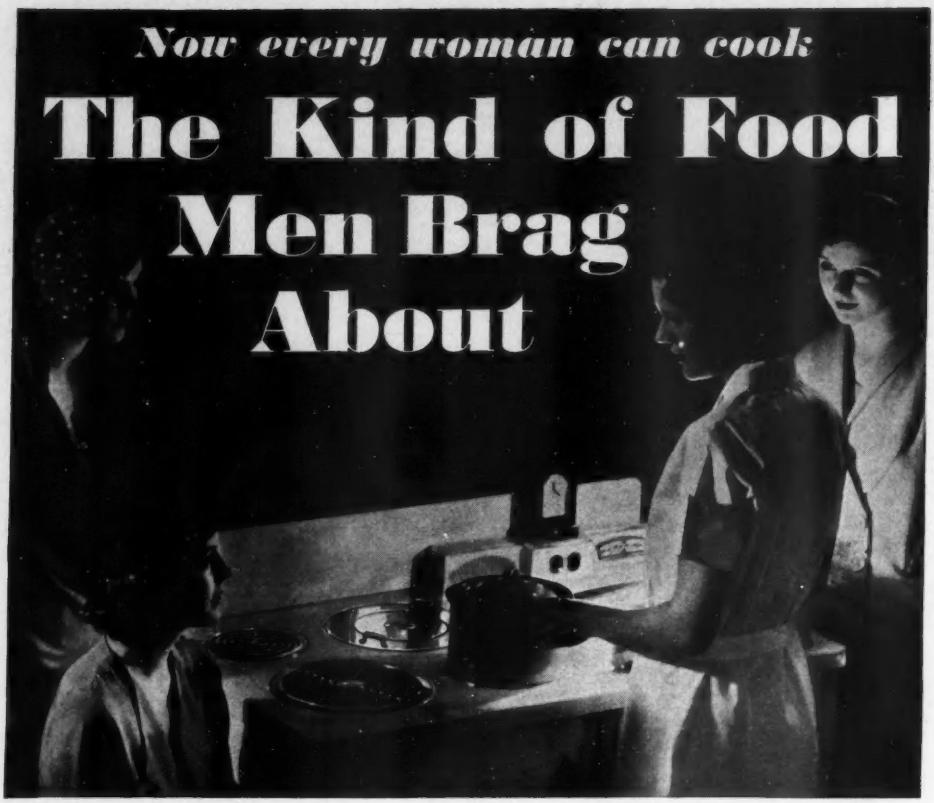
10 Cash awards will be given for the best.

(See inside back cover for details)

JUNE
1934

Now every woman can cook

The Kind of Food Men Brag About



GIVE your cooking skill a new magic touch. Enjoy the convenience of Hotpoint Electric Cookery and save money at the same time. A Hotpoint Electric Range brings definite, tangible economy. The national average cost of cooking on the Hotpoint Electric Range is a penny a meal per person.

Hotpoint brings the economy of cleanliness. Cooking with a clean, intense heat, Hotpoint never soot-blackens pans. Kitchen walls and curtains stay cleaner. Hotpoint kitchens require less work.

Now modern farm women can afford to free themselves from "pot watching." Hotpoint's automatic timing device permits you to prepare entire meals while away from the kitchen. Your time is released for other duties or pastimes.

Hotpoint's spacious oven and automatic temperature control will be a big help at threshing time. Investigate now the cleanliness, economy and healthfulness of this modern method of simplified cookery. Hotpoint Electric Ranges are on display at your power company. Edison General Electric Appliance Co., Inc., 5610 W. Taylor St., Chicago.

ELECTRIC Hotpoint RANGES

AND WATER HEATERS

June, 1934
Vol. 7 No. 6

Electricity on the Farm

IN THIS ISSUE

Heating Water Without Fire

BY T. E. HIENTON

The electrified farm is lacking in its completeness unless an electric water heating unit of sufficient size to supply the particular needs of that farm is available. The author on page 4 outlines and describes water heating units, stating the advantages and disadvantages of each type.

Tough Little Units That Do Big Jobs

BY GEORGE W. KABLE

The farmer who, having electric service and is able to assign the majority of his farm chores to the electric motor, knows that it is a grand and glorious feeling to be able to do so. The author on page 7 describes the operation, methods of selecting and maintenance, as well as mentions some of the tasks performed by this electrical handyman.

Cool Cooking—A New Deal for Cooks

BY VERA B. MEACHAM

An electric range symbolizes convenience in the workshop of the housewife. And, as the summer days approach, it has another important significance, a cool kitchen. What the author has to say about the New Deal for Cooks, will be found on page 9.

Regular Monthly Features

Electrical Housekeeping, page 12; On the Air, page 15; Questions and Answers, page 17; What's New, page 18.

EDITORIAL

THERE'S quite a difference between 70°, and 78.4° Fahr., particularly when those temperatures are found in a kitchen. And yet that is the difference between cooking with wood and cooking with electricity.

On a farm of the National Rural Electric Project in Maryland, tests conducted over a full summer showed that in a kitchen in which wood was used for cooking the temperature was, on the average, 8.4 degrees higher than that in a kitchen where the cooking was done on an electric range. The room temperature difference where electric range and oil stove were used was in favor of the former by 4.7 degrees.

While this may seem a minor point, it is actually one of considerable importance, for cooking by wood, coal or oil is a longer job than with electricity and requires more constant attendance on the part of the housewife. The automatic electric range, which turns the current off automatically when its task is done, releases the family cook for other work which may be done while the dinner is cooking.

There are several reasons for the growing popularity of the electric range. The articles by Vera B. Meacham, appearing in ELECTRICITY ON THE FARM on electric cooking, give much timely information on the subject. They're worth reading!

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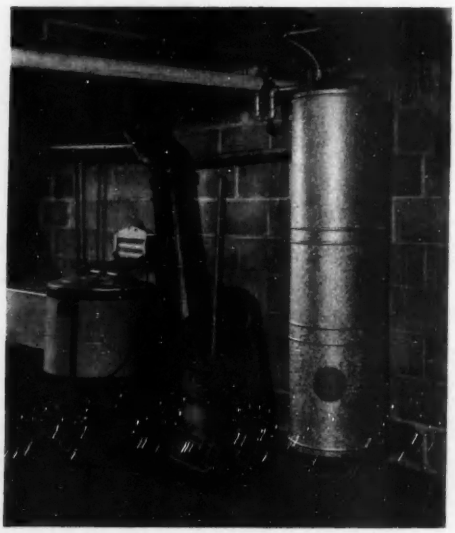
Left: Non-pressure manual control electric water heater in milk house of Russel Stephenson, Gaston, Indiana. This type of heater, being portable, can be moved about easily.

Below: The coal stove, once so popular for heating water goes on the pension list. This old range boiler on the F. F. Johnson farm, Delmar, N. Y., has been converted into an automatic electric water heater by adding a strap-on electric heating unit and thermostatic control, the whole tank being covered with insulation so operating costs will be low.

HEATING WATER WITHOUT FIRE

By T. E. HIENTON



ELECTRIC water heaters provide the answer to the need for an adequate supply of hot water on electrified farms today. Hot water any time at the turn of a faucet for bathing, laundry, household use, cleaning or washing the separator and milking utensils may be had now with this electric servant. Truly, these heaters are a far cry from the always empty iron reservoirs on the coal or wood ranges which have been the source of hot water in farm households for many years.

Ranging in size from the small 3-gallon, non-pressure, manually controlled heater for use in the milk house or dairy barn to the largest storage-type off-peak heater for household use, electric water heaters offer an important advantage to the farmer, low fire hazard. The importance of this feature is often overlooked by farmers in the selection of heaters.

The author well remembers that, as a boy on a dairy farm in Northern Ohio, the farm buildings were never left alone because of the fear of fire and resultant loss which might result from it. This

danger of fire still exists but use of electric heaters will assist in reducing it, as borne out on the dairy farm of a leading state university. Three fires were started in the boiler room adjacent to the main dairy barn during five years but there has been no trouble during three years' use of electric dairy water heaters which replaced the boiler.

Often Needed in Farm Business

Unlike the electric water heater in the urban home, which is used for residential purposes only, that in the farm home actually may play a part in the farm business. Hot water is needed for washing the milk strainers, milk cans, milk pails, milking machine and cream separator, for mixing a warm mash for the poultry or furnishing warm water for them to drink where heaters are not used during the winter, for warming the skim milk for the calves when mixed with it and for use in dressing poultry.

The necessity for using hot water for cleaning milking machines has been definitely established by experiment. In giving instructions on how to wash a milking machine, Prof. E. H. Parfitt states in Bul. 348 of the Purdue University, Agricultural Experiment Station: "Immediately after milking (a) Draw one pail of cold water through the units, (b) Follow the cold water rinse with a hot water rinse, not less than 165° F. and at least one and one-half gallons of water."

Convenience for the Housewife

The comfort and convenience afforded in the farm household by an adequate supply of hot water under pressure is well recognized by the farm housewife. Hot water is required for cleaning, washing dishes, bathing and for laundry work and the labor involved in pumping and carrying this water into the house, if done by hand, is enormous. Added to this is the frequent necessity of carrying in fuel, cleaning out and disposal of ashes and then building a fire before the water can be heated. The contrast between this situation and that afforded by an automatic electric water heater is sufficient to convert any farm woman to its use.

Electric water heaters for farm use may in a general way be divided into two groups, one in which water enters the heater under pressure and the other where it does not. The first group is by far the more numerous and has been divided* into five general types of service with variations of each group, as follows: (1) High wattage, manual control, intermittent service with thermostat protection. (2) High wattage, automatic service. (3) Low wattage, automatic storage with no limiting devices. (4) Low wattage, automatic storage with double throw switch, automatic peak limiter or clock control. (5) Off-peak storage with time control. The non-pressure group may be divided into two general types: (1) High wattage, manual control, and (2) Low wattage with thermostat control.

Description of the Various Types

Heaters used with the first type of service are perhaps best recognized as those often used with a furnace tank or range boiler. The circulation type or side arm heating unit is installed outside of the tank while the heating element of the insert type is installed inside the tank. Wattage of the heaters is usually a minimum of three kilowatts. The chief advantage of this type is the relatively low first cost and the definite control which the customer has on the amount of current used. One of the main disadvantages is that low rates are

* Development in Heating Water with Electricity" presented at Short Course for Women in Electrical Industry—Columbia Univ. Aug., 1929.

The electric hot water heater need not be placed out of reach of the children for fear of injury or shock. It is a safe and dependable unit whether located in the kitchen, dairy barn, cellar or other location about the farm home.

The handy pail heater may be transported to any location.

seldom granted on this kind of heater.

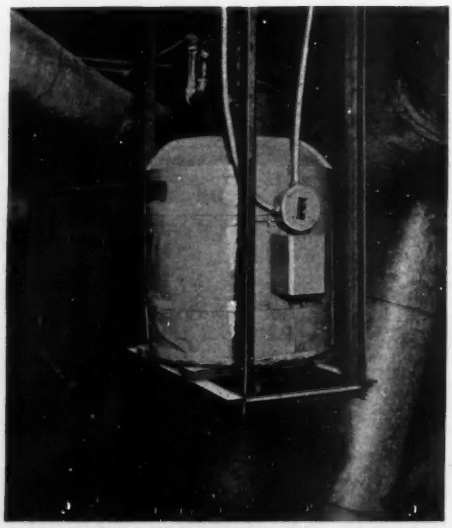
High wattage heaters which provide automatic service comprise the second type of service. This heater provides 24-hour hot water service, using heating units with usually two or more kilowatts capacity, and tanks varying upward from three gallons. A chief advantage of this type is the ability of the heater to provide hot water under a wide variety of use. One of the important disadvantages is the necessity for thorough insulation of the tank.

A heater of the third type of service is characterized by low wattage of heating units controlled automatically by a thermostat with no limiting devices. The heaters vary in capacity from 500 to 1500 watts, while tank sizes usually vary from 30 to 100 or more gallons. Advantages of this type are that the customer is not concerned with turning the heater on or off and that because of low demand a better rate may be secured. A chief disadvantage is that large use of water may mean a wait of some time for more hot water.

The fourth type is essentially the same as the third type except for such devices as a double throw switch, peak limiter or time switch which limit the time the heater is connected. The advantages are also essentially the same except that it may justify an even lower rate while the disadvantages which are also the same have the additional one of necessary attention to the double throw switch or added investment in peak limiter or time switch.

Off-peak storage with time switch control, the fifth type of service, usually has a heater of one kilowatt or more with tank sizes of 30 gallons and more. The chief advantage of this type is its ability to earn a very low rate. Its chief disadvantages are the sizes of tanks required and the possible lack of hot water for portions of the day unless some provision is made for the use of a booster heater.

Low wattage off-peak water heater located on farm near Evansville, Indiana. The large storage tank provides capacity for the entire day, although heating is usually done only at night.



High wattage electric water heater with thermostat control in farm home of Colver P. Ryan, Marion, Indiana. Service is provided through the entire twenty-four hours with this type of heater.

Advantages and Disadvantages of Non-Pressure Heaters

Of the two types of non-pressure heaters, that with high wattage and manual control is in greater use at the present time. Heating units range from 2 to 5 kilowatts in capacity with tanks ranging from 3 to 15 gallons. Advantages of this heater are in speed of heating and suitability to such use as heating water for cleaning milkers. The chief disadvantage is the danger of burning out heating elements.

The low-wattage thermostatically controlled non-pressure type heater is equipped with one kilowatt heating unit and has a capacity of 15 gallons. The thermostat on the heater will protect against burning out the heating element but its slowness is a handicap to the dairyman who wishes to heat the water for washing his milker while he is milking.

TOUGH LITTLE UNITS THAT DO BIG JOBS

By GEO. W. KABLE

DID you ever mix concrete all day with a shovel? It's no day's vacation, you'll admit. Well, I'm going to give you a tip on concrete mixing. Most mixer makers build a three cubic foot mixer. It can be turned with a crank if you feel that way, but it is also provided with a pulley for power operation. It's just a good little outfit for five or six neighbors or the local grange to own for building walls, concrete blocks, steps, floors, or driveways. But here's the tip. You can turn that mixer all day long with a ¼ or ⅓-horsepower motor for only ten to fifteen cents for electricity, and you don't need to supply a free dinner. Hinge the motor to the mixer frame so its weight will keep the belt tight. "V" belts are best. Protect the motor with a board or piece of tin, and it will just "walk away" with that concrete mixer better than any husky Irishman you ever saw.

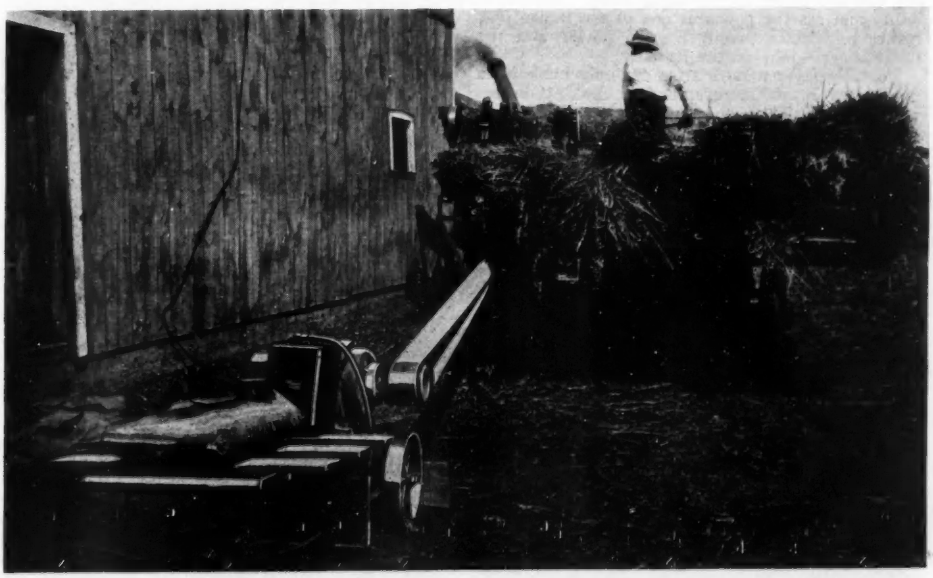
This little motor that mixes the concrete will do a lot of other jobs too, such as grinding tools, running the fanning mill, shelling corn, churning butter, grinding sausage, or "what have you?" It is easy to put a handle on a standard small motor and rig up a base so the motor can be quickly moved to any job.

The manufacturers used to make portable motors of less than one horsepower, but most of them have quit now because the motors are so cheap they could sell two standard motors for about the same price as one portable. Special bases and handles can still be purchased for rigging up a portable motor, or the outfit can be fixed up at home.

A ⅓-horsepower motor makes a good size for farm use. It can be plugged into any convenience outlet, is not too heavy to carry, and will handle some jobs such as the sausage grinder better than the ¼-horsepower motor. A repulsion-induction type motor is the best one to buy. It has more power for starting loads and uses less current.

This young "colt" of a motor is not what I started out to tell you about, however. It is the daddy of this fellow, with the real horsepower, I want you to be acquainted with. This concrete mixing job came to mind because it looks like tough turning for a tiny turner. Well, he's a chip off the old block. The big fellow is just as good at handling the *big* tough ones.

In college they told me that the thing which



An increasing number of farmers are coming to small threshing machines, motor driven. No big crews; no waiting, no fire hazard. It is estimated there are 50,000 such electric threshers in use in Sweden.

The portable motor can be set in places not accessible or safe for a tractor or gas engine. With a feed chute into the hopper of the mill, the automatically controlled motor will grind grain with practically no attention.

made an electric motor turn a load was the pulling of lines of magnetic force. These "lines" are like a million rubber bands pulling on the wires of the part that moves. If the load is heavy, the bands stretch a little more and pull harder. They may even pull two or three times the regular load to get over a tough spot, such as when bundles of corn get doubled up in the ensilage cutter. This flexibility and reserve power is one of the things that makes an electric motor a good power unit for miscellaneous jobs on the farm.

Portable farm motors are commonly made by a number of manufacturers in 3, 5, and 7½-horsepower sizes. They may also be had in 1½ and 10-horsepower units. The motors themselves are standard single phase motors. They usually have grease lubricated ball bearings, which obviate the spilling of oil when moving the motor from place to place, and which require greasing only about once a year. These motors are provided with some forty feet of flexible insulated wires to connect them to the electric circuit; they have push-button starters and automatic devices to protect them from injury in case of overloading, and they are mounted on various types of sturdy, wheel trucks for ease in moving them job to job by hand. The trucks differ mostly in the methods of mounting the motor and of anchoring it in position for use.

Some of the heaviest jobs for a farm motor which are common on many farms are ensilage cutting, feed grinding, wood sawing, and supplemental irrigation.

Hundreds of farmers all over the country are now using 5-horsepower motors to fill silos and like it much better than the old "crew" method of filling—(and so do their wives). Dave Maier out in Michigan is a good example of a pleased user. In 1931 I visited the Maier farm and found father and son filling the silo. The corn went into the silo fresh, needed no tramping, was completely settled when full, and there was no one standing around with an engine running waiting for a load, and no half dozen wagons lined up while cleaning a carburetor. The Maiers used an "old timer" of an ensilage cutter—so old it was gray, but well cared for. It had no automatic feed, but it pegged along, never clogged, and everyone was happy. In order to use a 5-horsepower motor on the ensilage cutter with genuine satisfaction some attention must be given to details such as lining up the machines, having the belt in good condition and not too tight, keeping the knives sharp, and feeding the cutter evenly. For the farmer who prefers some excess power or has to depend on hired hands to look after the equipment, a 7½-horsepower motor may be preferable.

In choosing the horsepower of a portable farm motor there are several factors to take into consideration. The smaller motor weighs less and costs less, and does not call for such heavy wires to supply the current. If the power company has a monthly rate based on the size of the motor, the service charge on the small motor is also less. To offset these advantages is that extra

(*Continued on page* 14)

Mr. Thompson tackles the woodpile with his 5 hp. portable motor. It is easily transported, quickly set, and has an excess of power. Note the extra pulleys on the frame for changing speed.

COOL COOKING—

A NEW DEAL FOR COOKS

By VERA B. MEACHAM

A cool kitchen.

WHEN you buy electricity for cooking, you buy a certain definite amount of heat. You can't rank up a pile of kilowatts out in the back yard, nor store them in the coal bin. Instead, when you want heat, you turn on just what you need as long as you want it. That heat may be made by water rushing through some flume to run a water wheel; it may be generated by fires under the giant boilers of a power house miles away, but those fires are no concern of yours; there is no fire in your clean kitchen.

When you take out the fire, you banish the wood box or the coal hod, scattered chips and chunks of coal. You have no ashes sifting their fine dust over tables and floor, no smoke or soot to discolor the walls or curtains, nor gases to tarnish the silver. Bringing in electricity to cook with cannot make dirt anywhere.

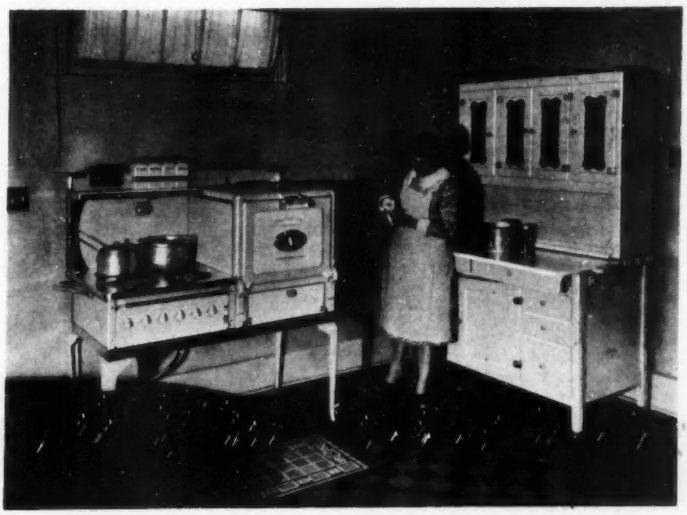
The heat from a glowing electric wire leaves the bottoms of kettles and pans as clean as their sides.

Perhaps a sooty kettle may seem like a very little thing, hardly worth bothering about. But if you spend just ten minutes a day scouring the bottoms of smoked up kettles, you put in 60 hours of that unproductive labor in a single year. That is seven and half eight-hour days, more than a week's labor, measured by the hours of folks who work outside the home.

Because they are not blacked up with burning fuels, electric ranges are very easy to keep clean. Most of them are finished with porcelain enamel that can be wiped off with a damp cloth. They are built without crevices to catch crumbs and dirt, with concealed bolts, and with rustless metal that keeps its polish.

Heating Units Easily Cleaned

The heating units quickly burn away any food that is spilled on them. You can brush out the burners with a soft brush, or clean them with a hand vacuum cleaner. You can lift the whole



Mrs. J. L. Baur of Jeannette, Pa., is setting the clock on her range to turn the current on at four-thirty and off at six. The food in the oven will be ready for supper when she gets home.

The heat is concentrated under the bottom of this frying pan.

burner right out of its place to clean around the edges, and you can take all of the racks and guides from the oven to wash the inside.

When you buy electricity for cooking, you are buying convenience, too. And convenience means a good deal to women who have wrestled with fires three times a day. Electricity needn't be lifted or lugged around. It needn't be kindled, nor coaxed into burning. You just turn it on. Moreover, you turn it on in just the amount you want, so you can cook without keeping a constant eye on the kettles of food.

The heat in the oven of an electric range is controlled by an accurate thermostat. You have only to set the control for any temperature you want, and turn on the current. You have no more responsibility in the matter. The current will stay on until the oven is hot enough; then the thermostat turns it off. When the temperature drops, on goes the current again.

Current Governed by Clock Control

There are even clock controls that will turn

You build a fire in an electric range just by turning one of the black buttons across the front.

Cool Kitchens with Electric Heat

By Geo. W. Kable

Summer temperatures in a kitchen equipped with an electric range were 8.4° lower than the same kitchen with a wood range, and 4.7° lower than the same kitchen using an oil stove. These figures were obtained with a recording thermometer on one of the farms of the National Rural Electric Project by Mr. B. B. Powell in 1930. Not only was the kitchen temperature much lower with the electric range than with other types of cook stoves, but it was only 1.4° higher than the temperature in the coolest part of the house.

This is only one part of the story. The number of hours required for cooking on the electric range was less than half that required with the other stoves, and the homemaker was saved the dirt and labor of handling wood and ashes and filling the oil stove. Some additional figures on the test are given in the following table.

Types of Units Tested

The wood stove was a small 6-hole stove with coil and range boiler for water heat; the oil stove was a 3 burner type without oven; the electric range had 3 surface plates and an oven. Temperatures were taken with a recording thermometer and averaged for 24 hours of the day.

Comparison of Farm Cooking Fuels

	Wood Range	Electric Range	Kerosene Stove
Date of study (1930)	June 9-16	July 14-21	Aug. 11-17
No. meals served	133	115	103
Fuel used	0.1 cord wood	34½ kwh	10 gal.
Hours spent cooking	16.8	7.5	15.75
Average kitchen temperature above adjoining hall temp.	9.8°	1.4°	6.1°

"I find that the electric range is the ideal range for cooking," said Mrs. Paul Krehbiel of Halstead, Kansas. "It is easy to keep clean, does not heat up the kitchen and yet it is as fast as other methods of cooking. And the best part of all is that it is no more expensive to operate than other ranges."

the current both on and off for you if you are to be away from home. You can put the food for supper in the oven, set the clock to turn the current on at four and off at five-thirty, and when you come back, perhaps a little past the hour, there is your supper, piping hot, and ready to go on the table.

These timers can be set to control the burners on the top of the stove, too, in some ranges. Some folks use them to start the breakfast cereal, or even the morning coffee. With these accurate, reliable controls in charge of the cooking, there are fewer watched pots in electric kitchens.

Buy Cool Cooking

When you buy electricity for cooking, you are buying cool cooking, if you know what I mean. For this is a fuel that keeps its heat on the job in hand without frittering it away warming up the kitchen.

This time of year particularly, a cool kitchen and a comfortable cook are cause for gratitude every meal time. You manage them both with electricity because the heat is confined to the places where you want it and not thrown out into the kitchen. If you are cooking on top of the stove, the heat is in a round burner beneath the pan. It is all right there. With a properly selected pan, one that covers the burner completely, that heat is focused on the bottom of the pan and absorbed to cook the food.

When Cooking With Electricity

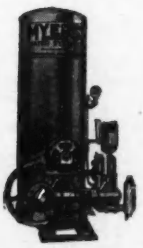
When you cook with electricity, you generally cook with small amounts of water and in kettles with tight covers. Since you can turn on just enough heat to keep the food at the boiling point, there are no clouds of steam pouring into the room.

When you are using the oven, there is even less chance for heat to escape. In a good range, the oven is well insulated on all six sides, so it takes relatively little heat to bring it to baking temperature. That insulation and a tight fitting door keep the heat inside for baking. Very little is lost through the walls.

Indeed you can have a temperature of 450 degrees inside the oven and you can still lay your hand on top. The outside is never really hot. When you are using this fuel, the kitchen stays as cool as any other room in the house.

When you buy current for cooking, you are no longer tied to the kitchen stove for hours each day. A cool kitchen, a cleaner kitchen, and a stove with a fire that tends itself bring a New Deal for Cooks.

WATER SERVICE by MYERS means all that you could possibly expect of a water system. Convenience personified—no care or attention required outside of an occasional oiling. A reputation for reliability that is second to none. And an economy of operation that has never been excelled.



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"Pump Builders Since 1870"

ELECTRICAL HOUSEKEEPING

Conducted by GAIL MEREDITH

LAYING OUT THE LAUNDRY

THIS model laundry never came about by chance. You can see that it was not tucked off in one corner of the basement by hurried builders who just put up a couple of tubs somewhere convenient to the water pipes. On the contrary, it is the result of much study and the considered planning of workers on McCall's magazine, Good Housekeeping Institute and the New York Herald Tribune Institute, as well as home service planners in the great manufacturing company that built it as a part of their display at the Century of Progress Exhibition in Chicago.

The room is about 15 feet square, with a linoleum covered floor, cream colored walls and plenty of light and air. Neither of these last depend on the weather, either. Every day is a good day to work in this laundry for there is a big light in the center of the room, wall lights over the tubs, and a light over the work table. A ventilating fan set in the wall at the back carries off the smell of the wash tubs with the hot steamy air.

The first thing at the front of the right hand wall is the clothes chute. It opens on the sorting table, but it has a little door on the front so you can put in the down stairs linen and towels. Below it is a roomy cabinet for the vacuum cleaner, mops and brushes of all kinds.

This sorting table is a new development to take some of the stooping and bending out of washday. It is covered with water proof linoleum, and on it you separate the clothes into different piles to wash together. Under half of the table are ventilated bins, each just big enough to hold the clothes for one washer tub, and into these bins go the clothes sorted according to color, table and bed linens, silk, woolens, and personal linens.

Both under and over this table are cabinets for starch, soap, bluing, stain removers, and all the things you need in the course of getting clothes clean. There is a high stool with a back to sit down on if you are one of those wise persons who can work as well sitting down as standing up.

Beyond the sorting table in the corner of the back wall is a drop leaf utility table that opens up into a good sized sewing table. On it is a portable sewing machine, and in its drawers are needle and thread, scissors and yarn. Since all of the folks who are working on laundry problems urge us to mend before rather than after we wash if we would save ourselves stitches and our clothes wear, this table that makes it handy to set a patch or sew up a sheet is a highly desirable addition to the laundry.

A movable stand with a clothes basket on it generally stands between the sewing table and the tubs.

The two laundry tubs are white porcelain enamel with a splash back deep enough to keep water spots from the walls. An electrical outlet for the washing machine is at the end of a rigid conduit coming out between the tubs far enough to be in easy reach, but back out of the way of water slopping over the edge of the tub.

Electric Hot Plates Conveniently Located

Beyond the tubs on a low stand are two electric hot plates. On one you can make the starch while you are sterilizing handkerchiefs or the baby's clothes in a little boiler on the other.

Built into the third wall at the left is an ironing board cabinet that opens and lets down a board with a small sleeve board attached. There is an

Electrical appliances help modernize the laundry as well as speed up the work, reducing the time required to complete this weekly household task.

electrical outlet in the cabinet so the iron can be attached conveniently.

A clothes rack for the finished clothes stands between the ironing board and the press type ironer in the foreground.

There is a clock on the wall to warn you of passing time, and a radio to make you forget it.

• • •

MAKING ICE CREAM

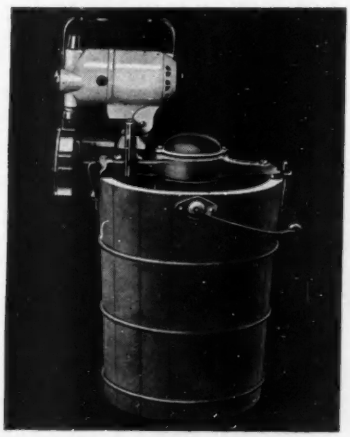
THERE is more than one way of making ice cream with electricity. You can freeze it in the ice trays of a mechanical refrigerator, or you can hitch a motor to your ice cream freezer. Either way is easier than turning a crank by hand.

The larger kitchen mixing machines have ice cream freezers as part of their regular equipment, freezers that run directly from the shaft of the mixer. These machines have ice chippers, too, round plates with rows of heavy prongs that scratch the ice up very fine, ready to pack in the freezer.

Within the last year the manufacturers of one of the small portable mixers has come out with a new attachment for his machine. It is a power unit that can be used on any of the common ice cream freezers, and is run by the motor of the mixer. This attachment can be fastened to the freezer easily and quickly and may be left there ready for use at any time. It is built to freeze up to three quarts of ice cream at a time.

Recipe for Strawberry Ice Cream

Perhaps you will like to try this new recipe for Strawberry Ice Cream that comes from the experimental kitchen of the company that makes this attachment. It sounds delicious, doesn't it?



An electrically driven ice cream freezer.

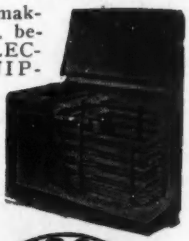
This kitchen mixing machine has an ice cream freezer as part of its regular equipment.

Mash two quarts of strawberries with two cups of sugar. Let stand until sugar dissolves. Then squeeze through cheesecloth until no more juice or pulp can be forced through. Place the pulp and seeds that remain in the cloth in a pan and gradually add one pint milk. Mix this with the pulp until the seeds separate. Squeeze through cheesecloth again until nothing remains in the cloth except the seeds. Add three pints of cream and sugar to sweeten.

Prepare freezer, pack with ice and salt, place above mixture in can, and freeze as usual.

Get Lower Bacteria Count
Get Better Milk . . .
MAKE MORE MONEY!

Thousands of dairymen are making more money today . . . because they use ESCO ELECTRIC COOLING EQUIPMENT



They safeguard their milk THIS EASY WAY. No more ice bills. No useless labor. No more losses from improper cooling.

ESCO ELECTRIC COOLING EQUIPMENT quickly, easily and automatically cools your milk to below 50 degrees . . . and keeps it cool until shipped.

ESCO

Clip this Coupon NOW

and Get Free Booklet.

"HOW TO GET BIGGER MILK PROFITS—THE ESCO WAY."

ESCO CABINET CO.
West Chester, Pa. 6EOF34

I am making ..... cans of milk ..... bottles of milk a day. Please send information on ESCO Electric Milk Coolers, Utensil Sterilizers and Water Heaters ..... also FREE Booklet "HOW TO GET BIGGER MILK PROFITS—THE ESCO WAY."

Name..... Address.....

P. O..... State.....

Tough Little Units

(*Continued from page* 8)

margin of power of the larger motor and the possibility of using it on the thresher or for other heavy loads. Farm power rates may eventually be reduced and service charges lowered. With the prospect of increasing use of electricity on farms, power may be cheaper long before the farm motor is worn out. A motor properly cared for should still be giving excellent service fifteen years from now, so one's selection should not be based too much on the immediate future.

Adapts Itself to Size of Load

All the other machines mentioned, as well as the cylinder corn sheller, feed mixer, grain elevator, hay hoist, pea viner, and a host of others, can be handled by a 5-horsepower or smaller motor. If a motor is purchased to handle the big jobs, it will also take care of the small ones efficiently. The fact that a motor is rated at 5 or 7½-horsepower does not mean that it always uses that much electricity. It adapts itself to the size of the load and because there is so little friction in it, the power used on small loads is very low.

There are a few other points in the selection of a motor you should know about. If the motor is to be used in dirty or dusty places, there should be provision for excluding this dust from the windings and brushes. Motors are made to turn at speeds of 900, 1200, 1800, and 3600 revolutions per minute. The slow-speed motors are heavier, and cost more in proportion. The 1800 r.p.m. motor is most commonly used and most satisfactory as an "all around" machine. Speed changes are made by substituting different size drive pulleys which are furnished with the motor together with a pulley puller.

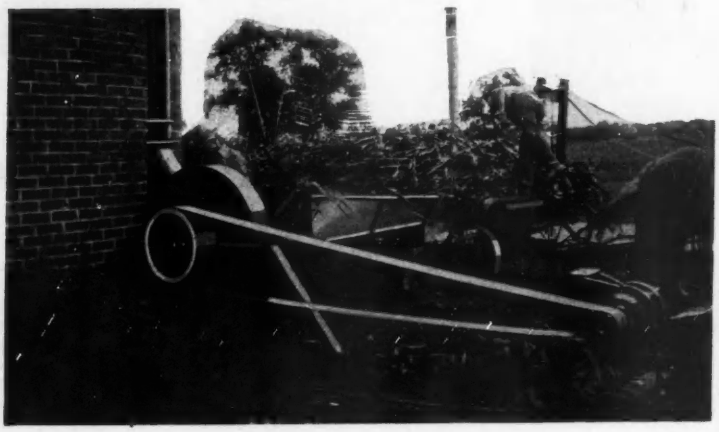
Motors on steel trucks cost approximately 30 percent more than the motor and starter without the truck. Where the motor will not have to be moved frequently, it is often satisfactory to mount it on homemade skids and thus reduce the first cost. Manufacturers have anticipated this need and supply motor units complete with attached starter and protective devices ready for mounting.

A ¼ h.p. motor mixes concrete for henhouse floor, without a backache.

The cost of electricity for operating a motor is frequently less than the cost of gasoline for an engine. The motor uses power only when it is actually working. There is no priming, no warming up, and no running while waiting. There is no crankcase oil to change, no tanks or radiators to fill or freeze, no overhauling to be done, and the whole outfit can be stored in a small space in the tool shed ready to run saws, grinders, blowers, etc., for winter repair work; or its regular station when not on periodic jobs may be in the feed room belted to the grinder.

Motors, tractors, and horses all get along well together. The motor may be snuggling into the belt of the ensilage cutter while the tractor is cutting corn and the teams hauling it in; or the motor is on the end of the push-button at the corn

(*Continued on page* 18)



Cutting ensilage with a 5 h.p. portable motor in Illinois. Silo being filled at the rate of 7½ tons per hour, ¼ inch cut, and elevating 45 feet. Power used ¾ kwh. per ton.

ON THE AIR

Conducted by Jerome J. Henry

Jack Benny Started New Program

WITH the glib wise-cracking Jack Benny setting the pace, Don Bestor furnishing the tunes, and soloists providing additional musical entertainment, a new program is being heard at

Here's laugh-promoter Jack Benny. And he had his picture taken with a straight face. He's being heard in a new program each week with Don Bestor's orchestra, and, of course, his wife, Mary Livingstone.

10:30 p.m., EST, every Friday evening through National Broadcasting Company stations.

Long a favorite of radio listeners, comedian Benny completed one series of programs last month and immediately started on another. In the new program Benny presides in his own familiar entertaining style. Of course, Mary Livingstone (Mrs. Jack Benny) will follow her husband to the microphone in each broadcast.

She too is now well established as a radio comedienne, and Bestor and his musicians were selected for the program for their potential comedy ability as well as for their music.

Benny was known first on Broadway and in the Hollywood motion picture circles before he joined the radio ranks.

• • •

Farm Families Keep Up With Information

WHILE government officials are busy administering the important campaigns to adjust production of agricultural commodities and to extend credit to farm families, Morse Salisbury, U. S. Department of Agriculture chief of radio service, sees that the entire country is informed by radio each day of the latest developments.

A keen student of agricultural affairs, Salisbury sifts from the wealth of material all of the highlights to be presented in understandable and interesting style in the Department of Agriculture radio periods. His radio material is sent to all parts of the country through the networks and individual stations.

By means of this service those farm families who own radio receiving sets are the first to learn of important new decisions of great importance to their plans and actions.

• • •

Dramatizing Ripley's "Believe-It-Or-Not"

IT takes a lot of preparation to put those Robert L. Ripley "Believe-It-Or-Not" broadcasts you've been hearing Saturday evenings on the air.

These stories of strange people and strange happenings are given the attention of Ripley and a staff of production experts during the entire week preceding the broadcasts.

From hundreds of curious stories the ideas for the programs are selected. A research staff then tracks down the dates, places, and forgotten people. Every clue is run to earth. Old newspapers are ransacked, and even witnesses are brought to light to pack authenticity into what turns out to be a brief broadcast on the air.

After the facts are personally checked by Ripley, they are ready to go on the radio. Particular

Sensation of the year

FRIGIDAIRE

Flowing Cold

MILK COOLER

with constant water level

Complete with refrigerating machine and insulated tank. Electric or gasoline power. Eleven models: 2 to 18 cans. Exclusive leveler maintains water at constant height for one or both milkings. No need to add or draw off water. Automatic circulator stirs water vigorously while cans are cooling; then stops of its own accord. Milk cools from 95° to below 50° in about an hour; may be held as cold as wanted.

The price is surprisingly low. Soon pays for itself. Owners state costs cut to less than half. Get book for all the facts.

MAIL COUPON OR POSTAL RIGHT AWAY

FRIGIDAIRE CORPORATION,
Dept. T-28, Dayton, Ohio.

Send book, "How to Make More Money on Milk," without cost or obligation.

Name .....

Address .....

P.O. ..... State .....

A scene taken at the 1933 International Livestock Exposition, with a crowd of visitors watching a radio broadcast being sent to farm homes to give listeners the news of the exposition in which the entire nation is interested.

care is taken in selecting actors for dramatizing the stories in order that they may sound true to life.

Sound effects and musical interludes by B. A. Rolfe and the orchestra are carefully rehearsed, then, 'believe-it-or-not," Ripley is often amazed at the fact that his contributions turn out so perfectly when dramatized for radio listeners.

• • •

Babe Ruth Gets Writers' Cramp

BABE RUTH broke training for the first time in his baseball career, a few weeks ago, and he did it for his old friends, the boys of America. The Babe who is in another big league season, stayed up until the wee small hours four mornings in a row to autograph enough baseballs for his radio series being heard over NBC stations.

His radio contract stipulates that he must autograph 900 baseballs every week to be given to the boys and girls who listen to his program of baseball news and advice to the young sandlot players who aspire to careers in big league uniforms.

The story of the Home Run King's life is being dramatized in the series, and, in each program Ruth chats on the outstanding plays of the day's game. Each Friday he devotes part of his time to telling Young America how to play baseball.

Ruth broadcasts from wherever the Yankees happen to be playing. Since he began starring on the baseball diamond Ruth has received three million letters from American boys, and he expects them all to listen to his radio programs.

And while the program continues Ruth keeps getting writer's cramp autographing baseballs at the rate of 900 each week.

• • •

A Weighty Matter

FRED WARING always weighs more on Sundays than he does on Thursdays. He reaches his high on Sunday evening and his low on Thursday morning. And here's how the GBS conductor explains that: Long arduous rehearsals for his mid-week broadcasts begin Monday and his working time increases steadily through Wednesday. He rests, comparatively speaking, from Thursday to Sunday, the time when the lost pounds return.

CHROMALOX
SUPER SPEED RANGE UNIT

Boils Faster—
No Current Wasted

Mrs. A. J. Kachik says: "I have one Chromalox unit installed on my range . . . I find everything comes to a boil in much less time. There is no electricity wasted so that means a saving in our light bill."

Try Chromalox Free on your own range without obligation.

Ask your Power Company for details or write to EDWIN L. WIEGAND CO., 7580 Thomas Blvd., Pittsburgh, Pa., Manufacturers Chromalox Electric Heating Units.

SAVE HAYING TIME AND LABOR

For use with one, two or three phase Electric Motors. Get motor and full data from your local power dealer.

HANDLE YOUR HAY FORK "AT ALL"

IRELAND HOIST

PAYS FOR ITSELF THE 1ST SEASON

"Unloads 3 times faster"—"Saves man and team" "Worth 3 times the money I paid"—"Certainly works well"—"Can't go wrong with an Ireland Hoist" Quick in action with perfect control. Capacity 1200 pounds direct pull. Thousands in use.

IRELAND MACHINE & FOUNDRY CO. NORWICH, N. Y.

Questions and Answers

Conducted by H. J. GALLAGHER

Question: *I am writing you in regard to the advertisement "The Electric Fencing Unit."*

We have a 32 volt D. C. light plant using 180 Ampere-hour batteries. This fencing unit operated on a 110 volt A. C. current.

Would it be possible to get a small A. C. generator that could be run by say a 1/6-HP. D. C. motor to furnish current for the fencing unit? If so, I would be interested.

F. FEHLBERG,
Creston, Mont.

Answer: The direct current of a 32 volt plant can be changed to 110 volts A. C. by means of a revolving convertor. Converters may be secured small enough for 1/6 H. P. operation. Equipment of this nature could be secured through the General Electric Co., Schenectady, N. Y. or Westinghouse Mfg. Co., E. Pittsburg, Pa.

I doubt the practibility of the arrangement as the motor would have to operate every time the fence was charged.

There are other ways in which this might be accomplished with D. C. service. I suggest you correspond with the E. J. Gengler Mfg. Co., Milwaukee, Wis., makers of the electric fence and learn their method of handling this problem.

Question: *I have a 3 inch pulley on an electric motor belted to a 10 inch pulley on a line shaft 2 inches in diameter.*

What size of pulleys do I need on the line shaft to run a grindstone, a corn sheller and a 4½ inch burr mill for cracking corn?

L. S.

Answer: A rule to determine either the speed or size of pulleys connected by a belt is:

Revolutions per minute (R. P. M.) of power unit x diameter (inches) of pulley on power unit equals R. P. M. of driven machine x diameter of its pulley. 1725 R. P. M. of motor x 3-inch pulley = R. P. M. of line shaft x 10-inch pulley. 1725 x 3 ÷ 10 = 517.5 R. P. M. of line shaft.

The line shaft at 517.5 R. P. M. is now figured as the power unit and all of the driver pulleys on the line shaft are run at 517.5 R. P. M.

A grindstone should run at approximately 60 R. P. M., consequently the line shaft would have to drive from a small pulley to a large pulley on the grindstone, using a 3-inch pulley on the line shaft and the given formula the result would be 3 in. x 517.5 ÷ 60 R. P. M. of grindstone = 25.8 inch diameter of required pulley; a 24 inch pulley would answer.

A 6-inch pulley on the line shaft to a 14-inch pulley on the 4½-inch burr mill would give an operating speed of 227 R. P. M. The 6-inch pulley could also be connected to the fly wheel on the corn sheller.

Question: *I have a house between 2,000 and 2,200 feet from the transformer where I now live and would like to know how much of a drop in*

(*Continued on page* 18)

Are You Informed?

The need for efficient and economic farm operation has never been greater. Do you know exactly how much electricity can help you?

Here is a list of tried and proven equipment and names of manufacturers who can help you.

Get acquainted at once with these manufacturers by writing for free literature which they offer.

Electric Ranges — **Page**

Edison G-E Appliance Co. ..... *Inside Front Cover*

Refrigerators

Frigidaire Corp. 15

Water Systems

Myers & Bro., F. E. 11
Heller Aller Co. .....

Water Heaters

Edison G-E Appliance Co. ..... *Inside Front Cover*
Esco Cabinet Co. 13
Wiegand Co., Edwin L. 16

Dairy Utensil Sterilizers

Esco Cabinet Co. 13

Milk Cooling Equipment

Esco Cabinet Co. 13
Frigidaire Corp. 15

Stationary Spray Pumps

Myers & Bro. Co., F. E. 11

Electric Poultry Supplies

Trumbull Electric Mfg. Co. .....

Clipping Machines

Chicago Flexible Shaft Co. .....

Range Replacement Units

Edison G-E Appliance Co. ..... *Inside Front Cover*
Wiegand Co., Edwin L. 16

Hay Hoists

Ireland Machine & Foundry Co., Inc. 16
Universal Hoist & Mfg. Co. 18

Electric Fencing Unit

Gengler Mfg. Co., E. J. 18

For information about devices not included in the above list—use this handy coupon.

--- FREE INFORMATION REQUEST ---

Electricity on the Farm, 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying.

....
....

My name is .....

Address .....

....

I get electricity from .....

..... 6-34

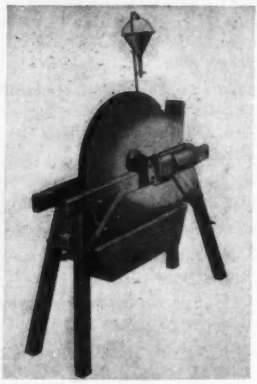
What's New

Reviewed by T. E. HIENTON

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request. Address your requests to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

Motorized Grindstone

"Keeping his nose at the grindstone" is a common phrase which must have been written by a farmer. Probably no other type of business requires the sharpening of as many different classes of tools as does that of farming. Plowshares, cultivator shovels, mowing-machine sickles, scythe blades, hoes and butcher knives all require regular attention to keep them from getting too dull to do good work.



The Motorized Grindstone

Development of an electrically operated grindstone has been made by a well-known manufacturer of small motorized tools. A universal, weather-proof motor is connected through an over-riding clutch to the shaft of the 22" by 2" grindstone driving it about 60 revolutions per minute. The end of the shaft extends beyond the seasoned hard-wood frame on the other side making it possible to use a hand crank if necessary. Motor speed is reduced through a combination of chrome-alloy steel spur and worm gears.

Fractional Horsepower Motors

Fractional horsepower motors are rapidly assuming many of the laborious tasks on American farms. In the farm household they drive the water pump, vacuum cleaner or ironing machine, operate the washer or refrigerator and run the sewing machine or food mixer. Around the farm small motors turn the separator or grindstone, run the milking machine, emery wheel or fruit sizer and drive the corn sheller, feed or concrete mixer and clipping or shearing machines.

A widely known manufacturer of electrical equipment has recently announced improved fractional horsepower motors of three types. Two of these, the polyphase squirrel cage induction motors and the single phase repulsion induction are for alternating current operation while the third, shunt, compound and series wound, is for direct current. The polyphase motors vary from 1/6 to 1 horsepower in size for 2 or 3 phase service, all voltages and frequencies. The single phase motors in sizes from ⅛ to 1 horsepower are for 110 or 220 volt single phase service. Either type of a.c. motor may be had with sleeve or ball bearings. Direct current motors are for 32, 115 or 230 volts from 1/30 to 1 horsepower in size for either rigid or resilient mounting.

Tough Little Units

(*Continued from page* 14)

crib ready to elevate the corn husked by the tractor drawn husker; or that same motor may save a man and horse on the hay hoist when men and horses are most in demand. Irrigation is becoming more and more popular as a supplement to the erratic rainfall of the humid area. There is no unit more trouble-free than the electric motor coupled to a centrifugal pump; and the teams and tractors may go on with their plowing and cultivating.

—And have you ever cranked a balky engine for an hour in freezing weather, and then replaced it with a motor needing only a push on a button to start it? Oh boy! It's a grand and glorious feelin'.

Questions and Answers

(*Continued from page* 17)

voltage there would be in that distance and if the service would be satisfactory? What size wire would you recommend for 110 *volts?*

H. A. SENDERLING, JR., Oxford, Pa.

Answer: A distance of 2,000 feet between the transformer and meter is ordinarily too great a distance to insure good service. On 115 volt service through a 30 amperes switch at the meter, a wire as large as No. 0000 would result in a drop of 5.96 volts. The resulting voltage regulation would be 5.18 per cent; for lighting the figure should not exceed 3 per cent.

Carrying the current beyond the meter and through the various circuits about the farm, would tend to increase the voltage drop at the places the energy was used.

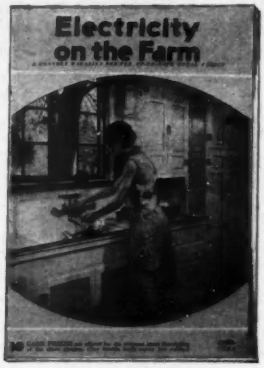
Should a number of customers receive service from the same transformer the customer on the end of the line naturally receives the poorest service under these conditions. I have known the service to be so poor that the customers would schedule their time of ironing so that only one iron would be "on" at a time.

The closer a transformer is to the center of its load the better service the customer will receive.

CLASSIFIED ADVERTISING

IDEAL HAY HOIST operates Hay Carrier with 2 to 5 H.P. motor or engine. Saves extra team and driver all through busy haying season. 10 DAYS' FREE TRIAL. Write for circular 202. UNIVERSAL HOIST & MFG. CO., CEDAR FALLS, IOWA.

SAVE MONEY with a GENGLER ELECTRIC FENCING UNIT. Only one strand of barbed wire needed—no expensive gates required. Fence line weeds practically eliminated. SOLD ON MONEY BACK GUARANTEE. Write today. E. J. Gengler Mfg. Co., Station F., Box H, Milwaukee, Wis.



APRIL COVER

COVER TITLE CONTEST

Awards for April

First Prize — $20

"Water running for Mother
Instead of Mother running for water."

CHAS. J. TAYLOR, Dallastown, Pa.

Nine $2.00 Cash Prizes

"A modern kitchen—a cozy nook,
Running water—a happy cook."

MRS. J. S. LORIMER, R.F.D. 3, Olathe, Kan.

"Hundreds of steps are saved each day
When water is pumped the 'lectric way."

FRED OMAN, JR., Knierim, Ia.

"Just turn on the faucet whatever the hour.
The water is pumped by electrical power."

MRS. OLIN H. OSBORN, R.F.D. 1, Warehouse Point, Conn.

"No hand water pump to try her mettle—
A shiny faucet fills the kettle."

MRS. GEORGIA CHIPMAN, R.F.D. 1, South Poland, Me.

"Just turn the faucet, and without delay
You get water pumped the electrical way."

RUBY REAVIS, R.F.D. 1, Rossville, Ind.

"No water bucket and dipper of tin,
No carrying of water since the electric pump's in."

MRS. C. E. KRUSE, Redmond, Wash.

"Kitchen work is quickly done
With the water electrically run."

MARY A. DANCE, R.F.D. 2, Steubenville, O.

"A kitchen spick and span you see,
With water pumped by electricity."

MRS. C. E. BROWN, R.F.D. 3, Freeport, Me.

"With city sisters I now compete—
Electricity made my kitchen complete."

MRS. FRANK VAUGHN, R.F.D. 2, Princeton, N. J.

JUNE RULES

Ten cash prizes will be awarded for the 10 best titles for the picture on the front cover of this magazine.

The first prize will be $20 cash and nine second prizes of $2 in cash will be awarded.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

Titles need not be longer than 10 words — the shorter the better — and they do not have to rhyme.

All members of the farm family to whom this magazine was sent may submit titles, but each contestant may submit only one title.

Question "A" must be answered correctly.

Entries must be sent to the Title Editor, ELECTRICITY ON THE FARM, 6 North Michigan Avenue, Chicago, Illinois, before July 1st.

Winning names and titles will be announced in the August issue.

Send your title on the coupon below or make out a similar form on a plain sheet of paper or government post card.

My title for the June Front Cover picture of ELECTRICITY ON THE FARM is.....

.....

.....

.....

(a) Have you a Hot Water Heater? Yes ☐ No ☐ If yes, check which type.

☐ Boiler connected to Coal Stove ☐ Gas Heat

☐ Oil Heat ☐ Electric Heat

My name is.....R.F.D.....

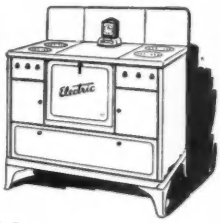
Post Office.....County.....State..... 6-34

Electricity on the Farm
24 West 40th Street
New York, N. Y.

Return Postage Guaranteed

Health Kitchens!

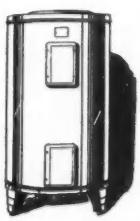
A great transformation is taking place in home kitchens. Old style kitchens, hot, stuffy, inconvenient and drab, are being converted by electricity into Health Kitchens—cool, airy, cheery and efficient.



Health Kitchens are All-Electric kitchens—equipped with an electric range, an electric refrigerator, an electric ventilating fan and an electric clock. Health Kitchens are also correctly lighted and have plenty of convenience outlets and wall switches. Health Kitchens, furthermore, always have an abundance of hot water, automatically and economically supplied by our low cost, flat rate Electric Hot Water Service available to all rural customers.

Convert Yours Into a Health Kitchen

Why endure, unnecessarily, the kitchen discomforts the coming hot summer days will bring? Start now to convert your kitchen into a Health Kitchen. Get an electric range or an electric refrigerator. Add to your present electrical kitchen equipment. Make your kitchen All-Electric as quickly as you can. You will find such action will pay real dividends in the resulting comfort, convenience, economy and joy an all-electric Health Kitchen affords.



Our Rural Sales representative will gladly confer with you on how you can most easily convert your kitchen into a Health Kitchen.

The Milwaukee Electric Railway and Light Company

Public Service Building -:- Milwaukee, Wisconsin

R-41 240—1

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